
Excess Winter Deaths in Wirral 2013/14

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Team

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Version History	Date	Author	Reviewer	Actions
V1	07/01/16	Hannah Cotgrave	Sarah Kinsella	Graphs updated, definitions clarified
V2	25/01/16	Hannah Cotgrave	John Highton	Links updated, graphs updated, correction of general typing errors
V3	23/02/2016	Hannah Cotgrave	Edward Kinglsey	Definitions clarified, graphs updated

Report Overview

Abstract	
Intended or potential audience	<p>External</p> <ul style="list-style-type: none"> • Community & voluntary sector organisations, particularly those involved with people with mental health problems • Councillors and Constituency Managers • CCG and CT colleagues <p>Internal</p> <ul style="list-style-type: none"> • JSNA Bulletin • One Brief • DMT (plus other departmental DMTs) • Relevant LA Heads of Service
Links with other topic areas	<ul style="list-style-type: none"> • Housing conditions • Deprivation • Life Expectancy • <i>Health Protection (currently updating)</i>

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Key Findings for 2013/14

- The Excess Winter Mortality Index (EWMI) for all areas decreased substantially between 2012/13 and 2013/14; England decreased from 19.8% to 11.3%, the North West from 21.1% to 11.9% and Wirral from 30.1% to 15.1%.
- Wirral (15%) had a higher EWMI than the North West (13%) and England & Wales (12%), despite having warmer temperatures.
- In Wirral, males (19.3%) had higher EWMI than females (11.4%), whereas in England & Wales this was reversed with females (12.8%) having a higher EWMI than males (10.4%).
- Males aged 85+ (32%) had the highest EWMI in Wirral, and males aged 0-18 (-33%) had the lowest EWMI.
- In England & Wales, the EWMI of Respiratory diseases, Circulatory diseases and dementia & Alzheimer's disease decreased by nearly half between 2012/13 and 2013/14.
- Birkenhead Constituency (27%) had the highest EWMI, followed by Wirral West (19%).
- Respiratory disease had the highest EWMI for Wirral (21%) and England & Wales (30%).
- There are many different factors which impact on Excess Winter Deaths. Environmental, social and personal factors such as deprivation, age, gender, housing status and thermal efficiency of the home all have an impact.

Notes

Due to historical mortality data being unavailable, a 5-year EWMI is not able to be calculated and therefore figures in this report are not comparable with Wirral's previous reporting on EWMI 2004-09. This also means that analysis has not been provided lower than ward level. Ward level data should also be used with caution as small numbers can lead to significant fluctuations for single year data.

Euro MOMO (2015) reported that excess winter mortality in 2013/14 was below the expected for Europe in general, with a substantial absence of excess mortality in the older population. The report infers that the impact of influenza in older people was reduced due to underlying immunity to the dominant strain circulating during the period.

Thanks to Edward Kingsley (Principal Strategic Housing & Investment Officer and Toby Zorn (Senior Environmental Health Officer) from Wirral Council for their key contributions to this report.

Introduction

The Excess Winter Mortality Index (EWMI) is a statistical measure used by The Office of National Statistics (ONS) to quantify the impact of the winter months on mortality. Deaths occurring between December and March, in addition to what would be expected during the non-winter months, are classed as Excess Winter Deaths (EWD).

They are calculated by taking the average number of deaths over the previous period (August to November) and the subsequent period (April to July) and subtracting them from the total number of deaths during the winter period (December to March), as shown below:

$$\frac{\text{Aug to Nov deaths} + \text{Apr to Jul deaths}}{2} = \text{Average non-winter deaths}$$

$$\text{Dec to Mar deaths} - \text{Average non-winter deaths} = \text{Excess Winter Deaths}$$

The Excess Winter Mortality Index (EWMI) is then calculated by expressing the excess winter deaths as a percentage of the average non-winter deaths:

$$\frac{\text{EWD}}{\text{Average non-winter deaths}} \times 100 = \text{Excess Winter Mortality Index}$$

ONS focuses its EWMI report on the following areas:

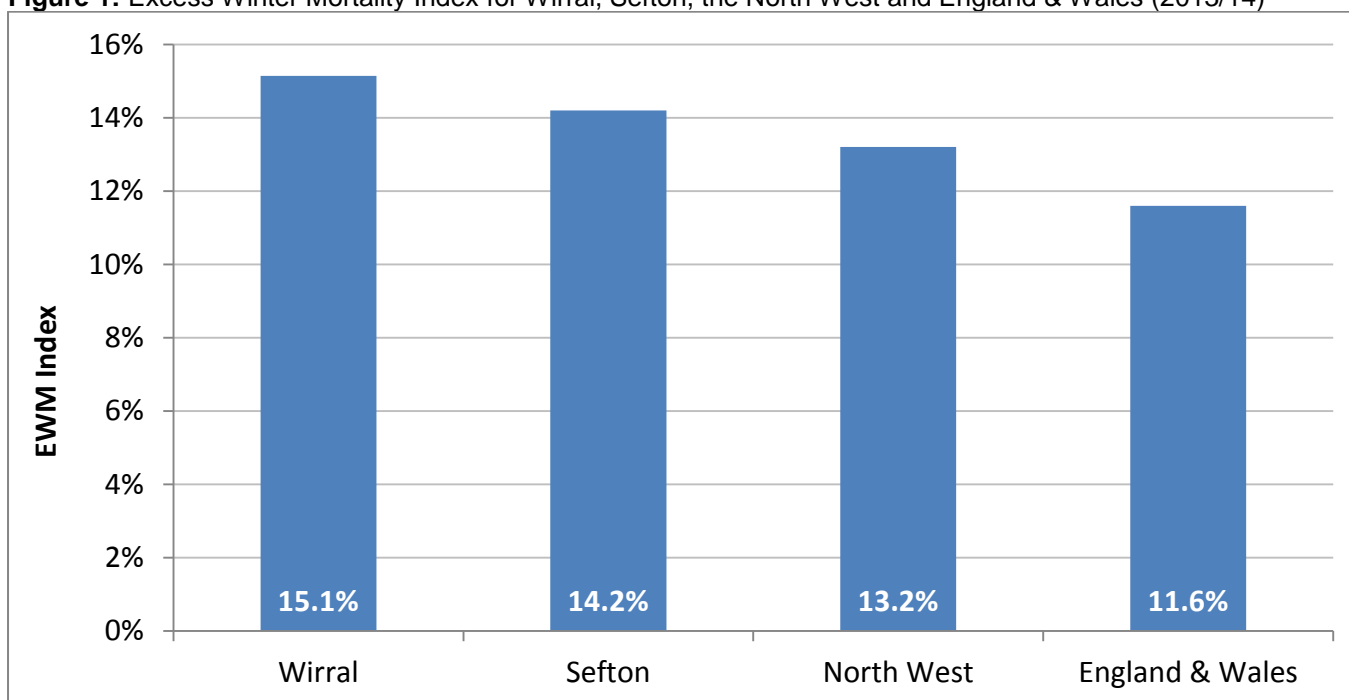
- Age and Gender
- Geography
- Temperature
- Cause of death, specifically; Circulatory Diseases, Respiratory Diseases and Dementia & Alzheimer's disease
- Influenza (flu) rates

This report will look at all of these factors in addition to deprivation, energy efficiency and housing tenure. Appropriate comparisons to national and regional figures will be provided where possible. The report produced by ONS can be found on <http://www.ons.gov.uk/>.

Excess Winter Deaths (EWD) in Wirral

Figure 1 below shows the comparison of EWMI for Wirral, the North West and England & Wales for 2013/14.

Figure 1: Excess Winter Mortality Index for Wirral, Sefton, the North West and England & Wales (2013/14)



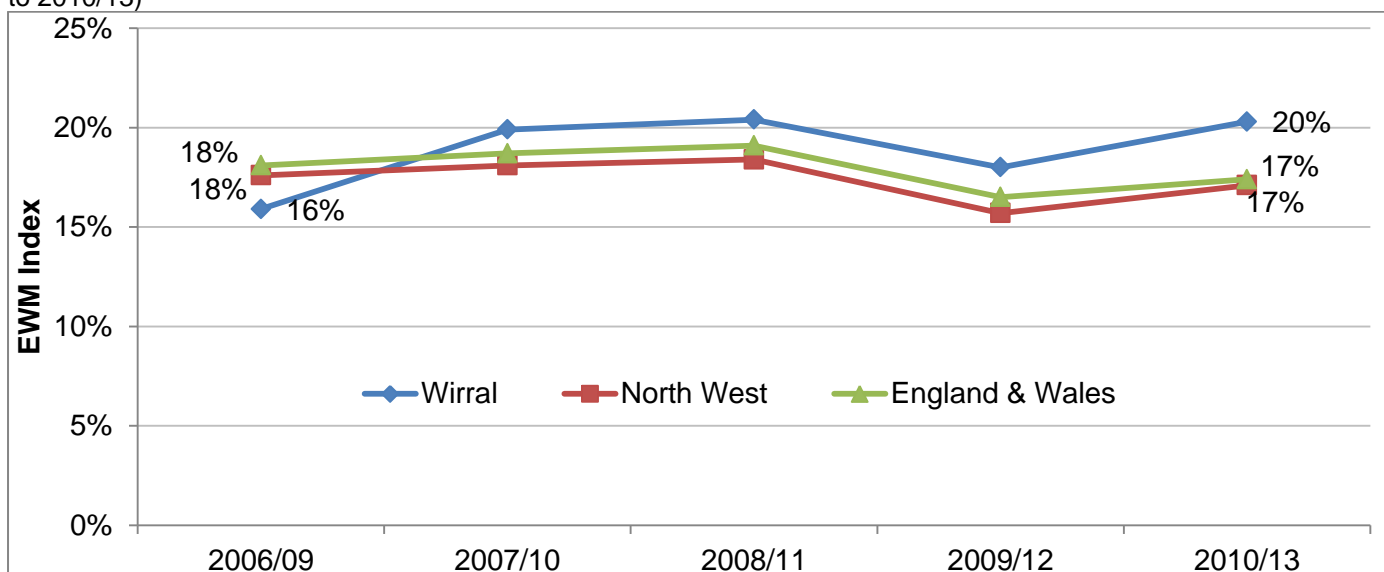
Source: [ONS](#), 2014

Figure 1 shows that Wirral had a greater EWMI than statistical neighbour Sefton, the North West region and England & Wales in 2013/14. Of 433 local authorities, Wirral had the 32nd highest EWMI (15.1%) in England for 2013/14, with the highest being Lincoln (45.9%) and the lowest being Waveney (1.7%) (ONS, 2014).

The EWMI for all areas decreased significantly from 2012/13 to 2013/14. England's EWMI decreased by 8.5% (19.8% to 11.3%), the North West decreased by 9.2% (21.1% to 11.9%) and Wirral decreased by 15% (30.1% to 15.1%). It has been suggested that 2012/13 experienced a sharp increase in excess winter deaths due to a prolonged period of influenza activity (ONS, 2013).

EWMI can fluctuate dramatically between years (see Appendix 1) and so to smooth out the yearly variations 3-year averages¹ have been calculated for the EWMI of Wirral, North West and England (Figure 2 below).

Figure 2: Average Excess Winter Mortality Index in Wirral, North West and England & Wales (3 years pooled 2006/09 to 2010/13)



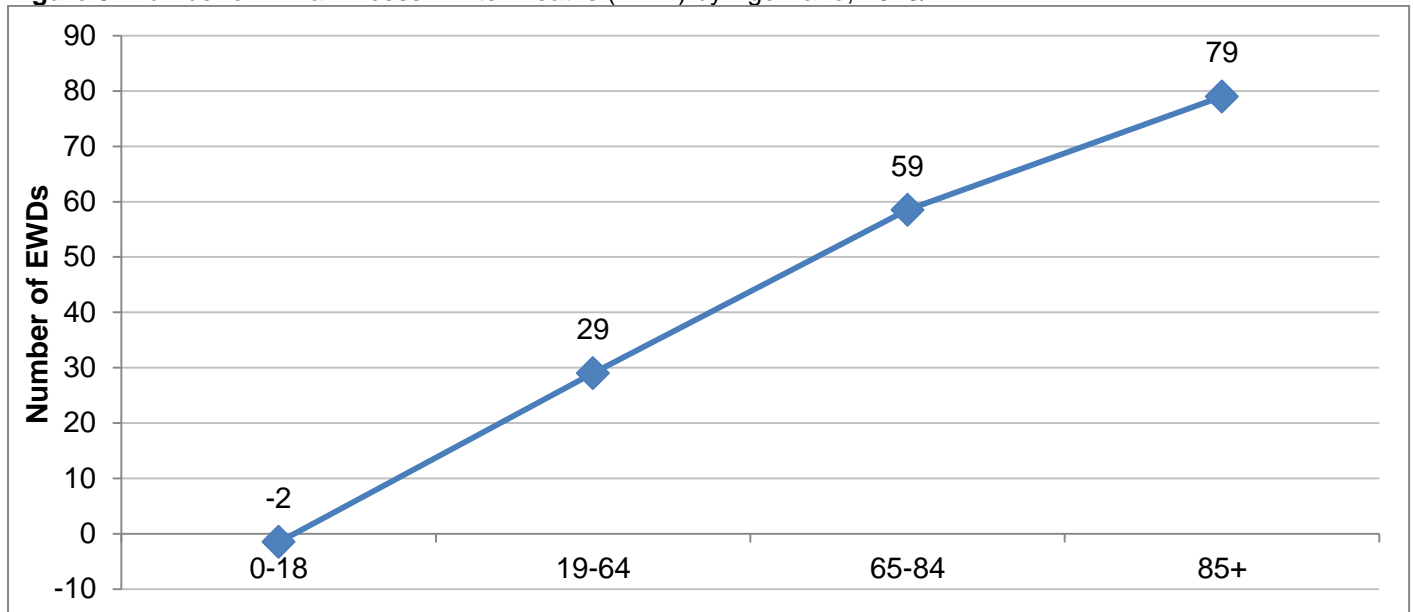
Source: [ONS](#), 2014

¹ Data has been pooled to smooth out the random year-on-year variations which can characterise small datasets such as Excess Winter Deaths

Age & Gender

Wirral has an ageing population and Figure 3 (below) highlights that early winter deaths increase with age; those aged 85+ being the most vulnerable age group during winter months, with the total number of excess winter deaths total of 79 for 2013/14.

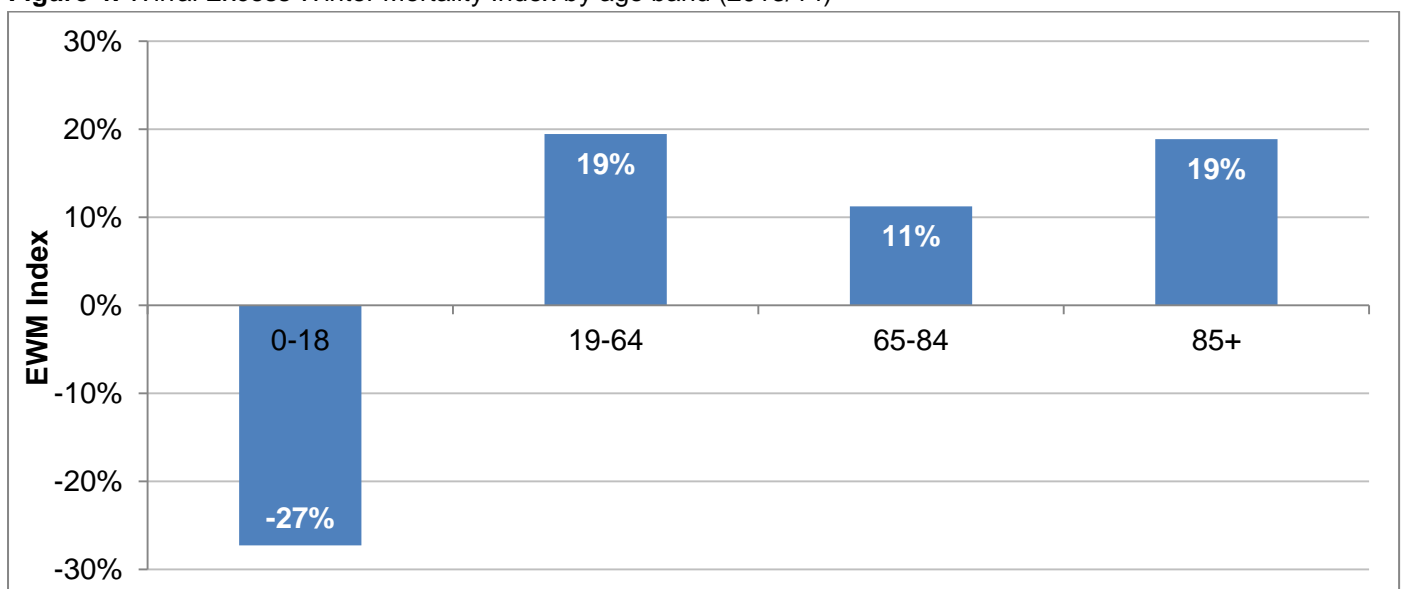
Figure 3: Number of Wirral Excess Winter Deaths (EWD) by Age Band, 2013/14



Source: Public Health Mortality Files, Wirral Council, 2015

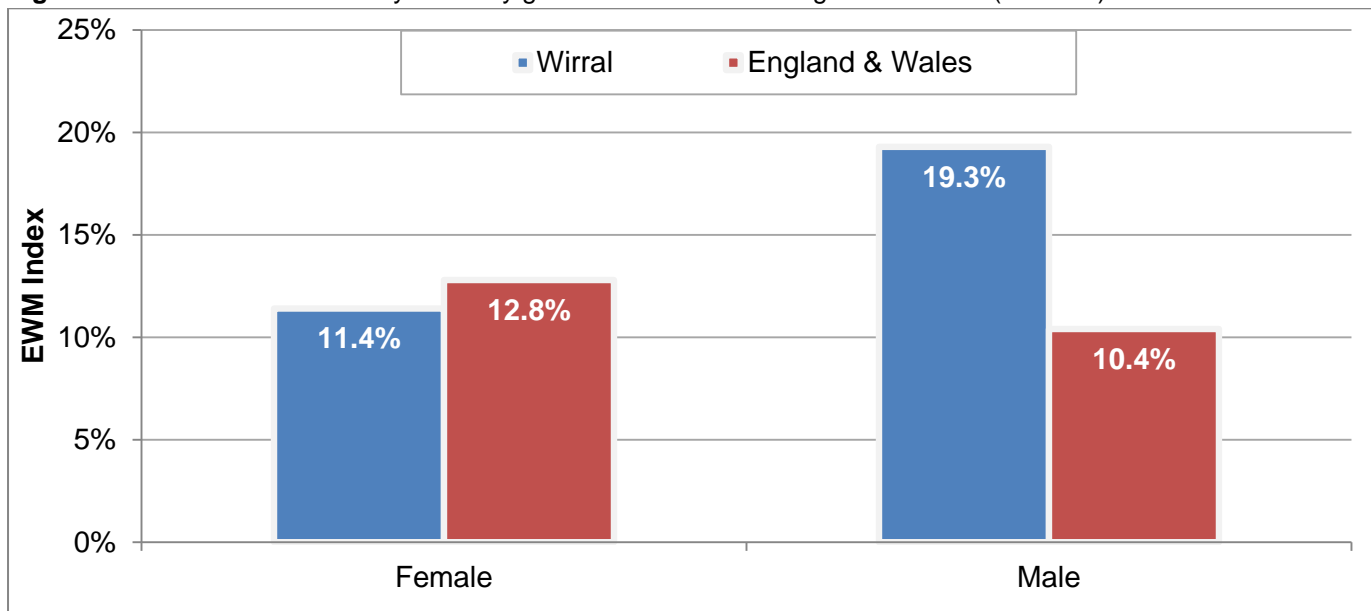
Figure 4 below shows that when calculating the EWMI for these age bands, those aged 19-64 also demonstrate a higher vulnerability (see Figure 4 below) with a EWMI of 19%. Reasons for this are unclear, but small numbers (especially when using figures from only one year) can show fluctuations and this is to be expected. Figure 4 shows that residents aged 0-18 have the lowest EWMI (-27%). Figures for the 0-18 age bracket of -2 EWDs (Figure 3) and -27% EWMI (Figure 4) mean that were actually two *less* deaths than expected (27% less) in winter when compared to the non-winter death average.

Figure 4: Wirral Excess Winter Mortality Index by age band (2013/14)



Source: Public Health Mortality Files, Wirral Council, 2015

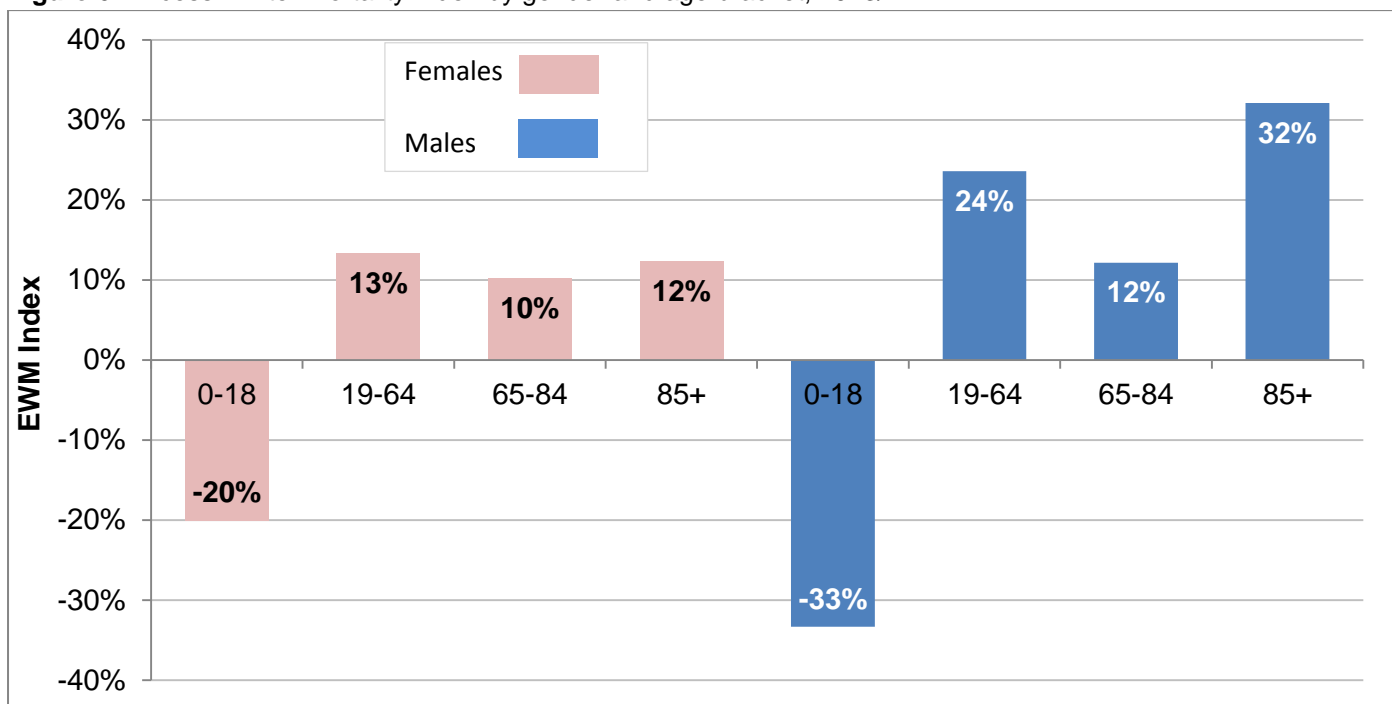
Figure 5: Excess Winter Mortality Index by gender for Wirral and England & Wales (2013/14)



Source: Public Health Mortality Files, Wirral Council, 2015 and [ONS](#), 2014

Figure 5 above shows that females have a higher EWMI than males in England & Wales (females aged 85+ typically having the highest EWMI of all). This trend was evident in Wirral for 2012/13, where females had an EWMI of 34.8% and males, 25.6% (ONS, 2015a). Figure 5 shows the significant decrease in Wirral for both males and females (25.6% to 10.4% and 34.8% to 11.4% respectively). Figure 5 also shows that females in Wirral have a lower than average EWMI for England & Wales, whereas males have significantly higher than average EWMI.

Figure 6: Excess Winter Mortality Index by gender and age bracket, 2013/14



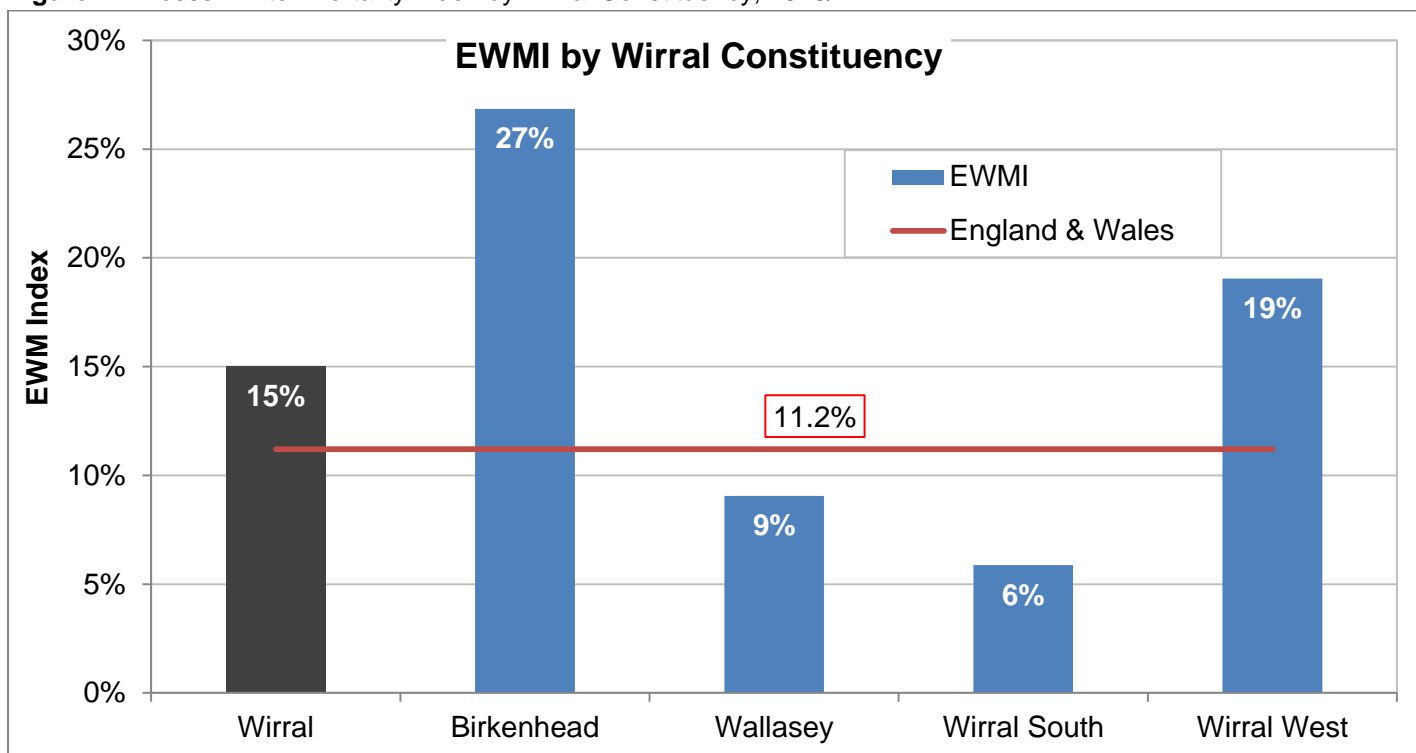
Source: Public Health Mortality Files, Wirral Council, 2015

Females aged 85+ had the highest EWMI nationally (ONS, 2014a), and in Wirral 2012/13 (ONS, 2013) this trend was reflected with females aged 85+ having an EWMI of 51.3%, with males aged 85+ at 20.8% (less than half of their female counterparts). However in Wirral these figures were reversed in 2013/14, as Figure 6 above shows, with males aged 85+ having a higher EWMI (32%) than females aged 85+ (12%) (almost three times less than their male counterparts). Figure 6, above, reflects a similar trend in other age brackets, with males having a higher EWMI for all age brackets excluding those aged 0-18.

Geography

Figure 7 (below) shows that Birkenhead and Wirral West constituencies had the highest EWMI rates (27% and 19%), in Wirral and were also higher than the national EWMI of 12%. Wallasey and Wirral South constituencies had lower EWMI rates (6% and 9%) than the national average. See Appendix 2 for EWMI by Wirral ward for 2013/14.

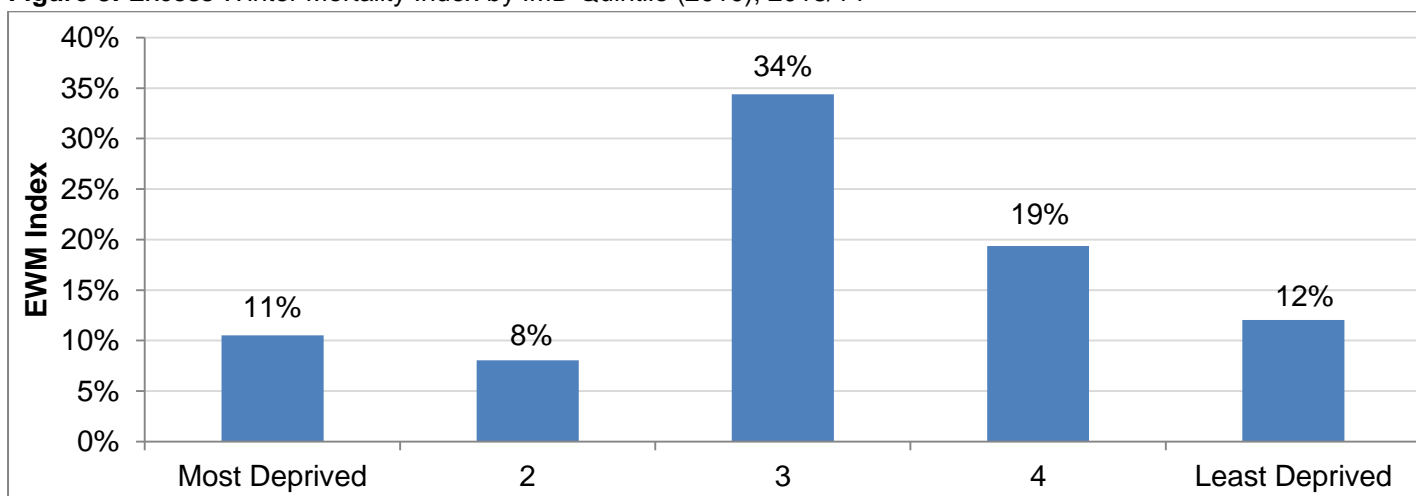
Figure 7: Excess Winter Mortality Index by Wirral Constituency, 2013/14



Source: Public Health Mortality Files, Wirral Council, 2015

Figure 8 shows EWMI by deprivation quintile (as defined by the Index of Multiple Deprivation (IMD) 2010²) and, though slight, it shows there is little correlation between deprivation and Excess Winter Deaths. The three less deprived quintiles all have a higher EWMI than the two most deprived quintiles. This reflects the national finding that there is no documented relationship between deprivation and excess winter deaths. An explanation for this lack of association with deprivation may be due to social housing being more energy efficient and lower income families are more likely to live in social housing. Wirral Council (2015) state that the average Energy Performance Certificate (EPC) for social housing is Band C, whereas privately owned or rented properties have a lower average EPC rating of D.

Figure 8: Excess Winter Mortality Index by IMD Quintile (2010), 2013/14



Source: Public Health Mortality Files, Wirral Council, 2015

² IMD was updated in 2015 but does not relate to this data

The Kings Fund (2014) suggests that investment in housing interventions will save the NHS money over a 10 year period.

Figure 9: Slide from King’s Fund presentation: Making the case for Public Health interventions, Sept 2014



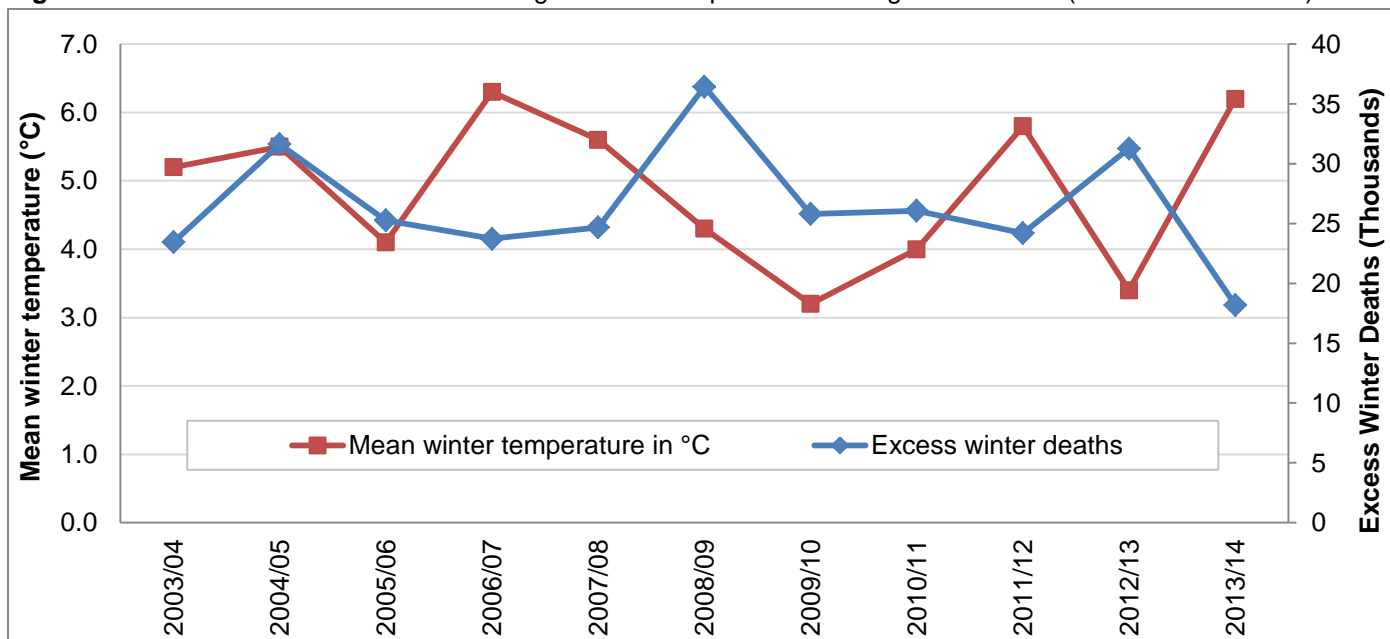
Return on investment
 Housing interventions to keep people warm, safe and free from cold and damp are an efficient use of resources. Every £1 spent on improving homes saves the NHS £70 over 10 years.



Source: Kings Fund (2014)

Temperature

Figure 10: Excess Winter Deaths and Average Winter Temperature for England & Wales (2003/04 to 2013/14)



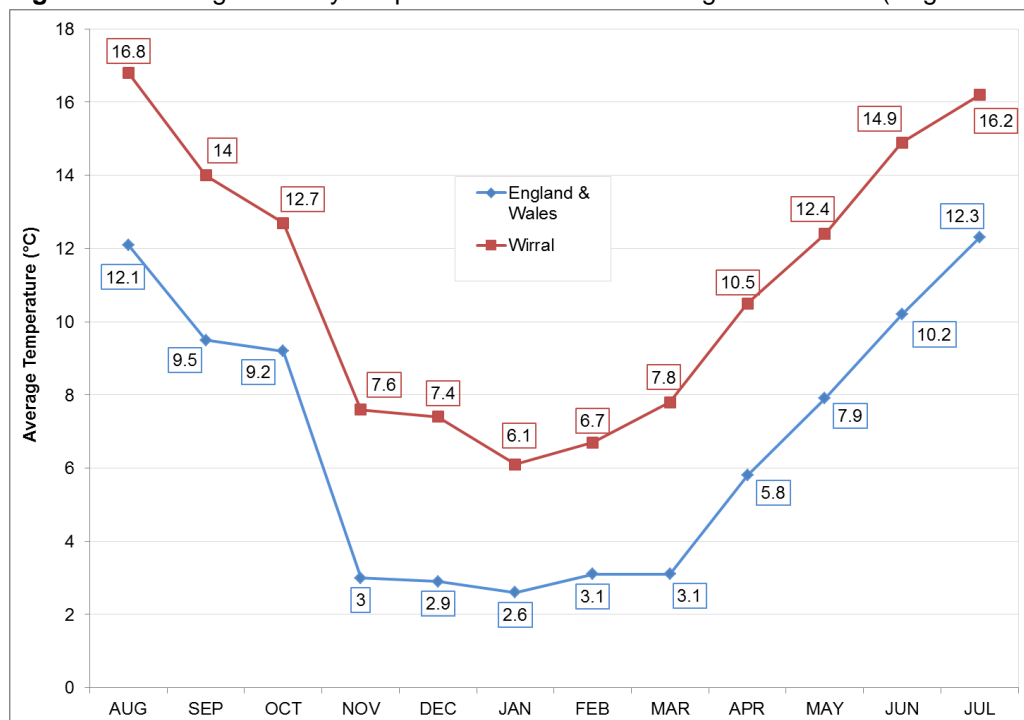
Source: [ONS](#), 2014

Figure 10 (above) shows the relationship between temperature and number of excess winter deaths in England & Wales. In some years, such as 2006/07 and 2013/14, a relationship appears observable; a high average temperature and a low number of excess deaths. However, this is not always the case, e.g. 2009/10 had an average temperature of only 3.2°C, yet experienced a level of excess winter deaths similar to those of milder winters. It is therefore

apparent that whilst cold weather is one factor in excess winter deaths, it is one of many and alone, does not explain all Excess Winter Deaths.

Figure 11 shows that during 2013/14, average monthly minimum temperatures in Wirral were around 3-4°C warmer compared to England & Wales. This supports the theory that temperature is not the only factor in excess winter deaths as Wirral had a higher EWMI of 15%, which is 3% higher than the England & Wales EWMI of 12%.

Figure 11: Average monthly temperature for Wirral and England & Wales (August 2013 to July 2014)

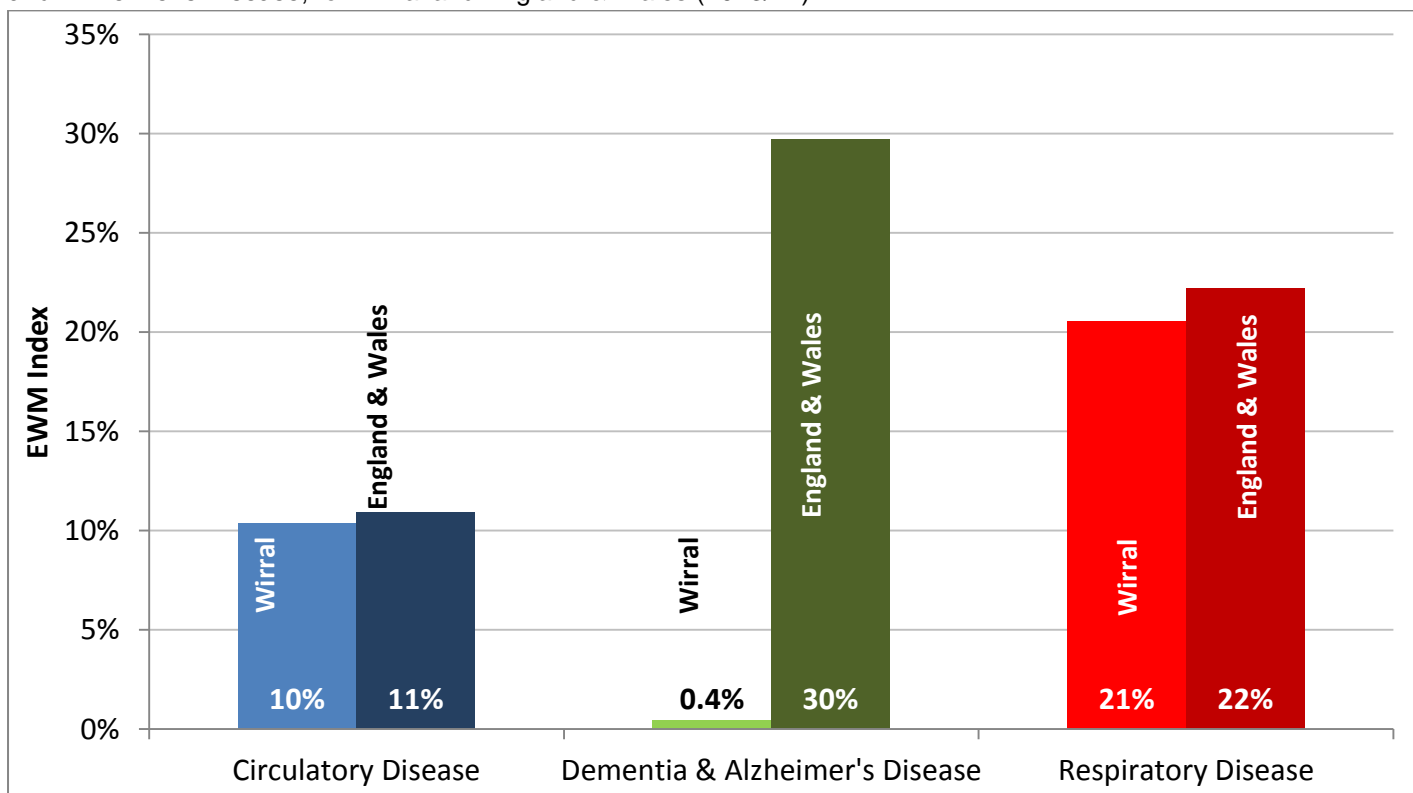


ONS (2014) stated that a “greater proportion of homes in England now have measures to improve energy efficiency [...] compared with 2001” meaning homes are becoming more energy efficient; they are easier to heat and keep warm. In 2012/13 Warmer Wirral, a Wirral Council and British Gas funded insulation scheme run by the charity Energy Projects Plus, provided free loft and cavity wall insulation to Wirral residents who owned or privately rented their home. 18,000 homes received this during 2010-12. (epplus.org.uk, 2015).

Source: Environmental Health Team, Wirral Council, 2015

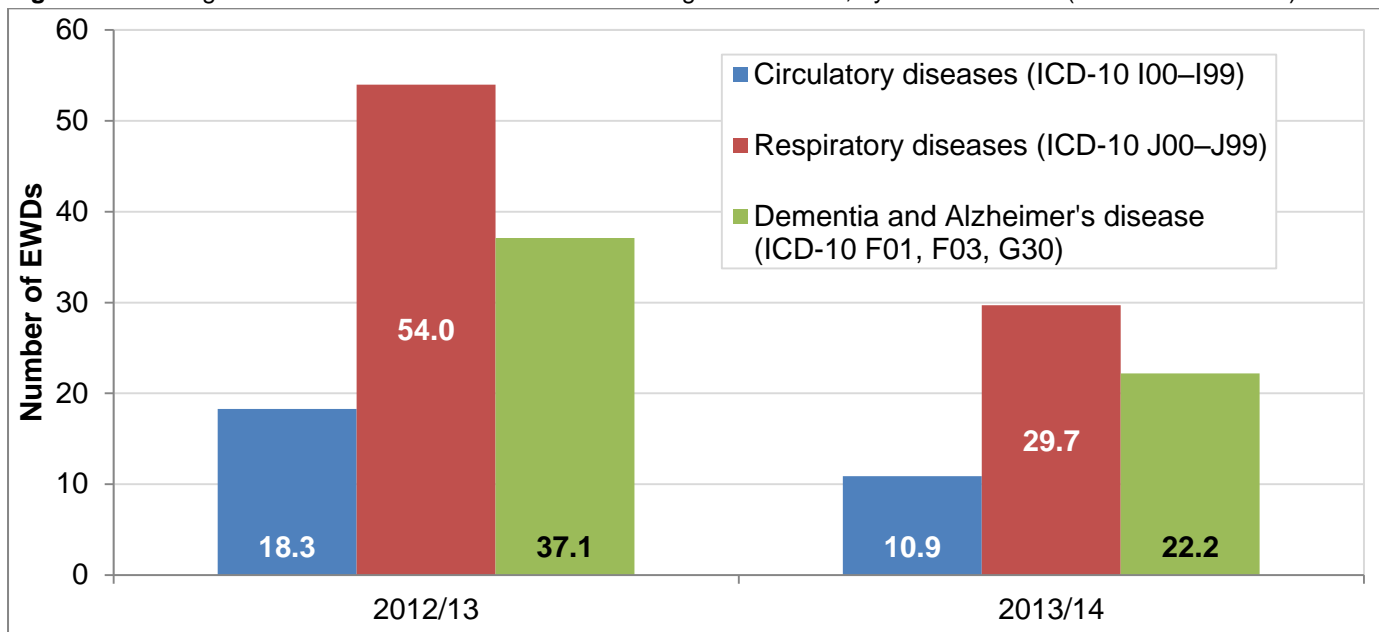
Cause of Death

Figure 12: Excess Winter Mortality Index by cause of death: Respiratory disease, Circulatory disease, and Dementia and Alzheimer’s Disease, for Wirral and England & Wales (2013/14)



Source: Public Health Mortality Files, Wirral Council, 2015

Figure 13: Average number of Excess Winter deaths in England & Wales, by cause of death (2012/13 & 2013/14)



Source: [ONS](#), 2015

In England and Wales (ONS 2015a), respiratory diseases caused the largest *number* of excess winter deaths in 2013/14 with an EWMI of 30%. This means that there were 30% more deaths from respiratory diseases in the winter period, compared to the non-winter period.

Respiratory disease was also the highest contributor to the EWMI in Wirral, but at only 21%, it was 9% lower than England & Wales for 2013/14.

According to ONS (2015a), circulatory diseases also caused a substantial *number* of excess winter deaths in 2013/14 and had an EWMI of 11% in England and Wales. This means that deaths from circulatory diseases were 11 higher during the winter period, compared to the non-winter period.

Wirral had a similar EWMI of 10% for circulatory diseases in 2013/14 (slightly lower than the rate for England & Wales).

A further underlying cause of death that ONS (2015a) included in their analysis was Dementia & Alzheimer's disease. In England and Wales for 2013/14, the EWMI for this cause was 22%. It is thought that mortality from Dementia & Alzheimer's disease displays a seasonal effect due to the added vulnerability of people with these conditions. However, in Wirral this does not appear to be the case, with an EWMI of only 0.4%.

Reasons for the large disparity between England & Wales and Wirral for this cause are unclear.

Further Reading

[NICE Guidance \(NG6\) Excess winter deaths and illness and the health risks associated with cold homes](#)

[Quantification of the impact of indoor dampness and mould on asthma onset in children and hospital spells due to respiratory problems in children and adults in Wirral PCT](#)

[Excess winter deaths in Europe: a multi-country descriptive analysis \(2014\)](#)

[EuroMOMO \(European monitoring of excess mortality for Public Health action\)](#)

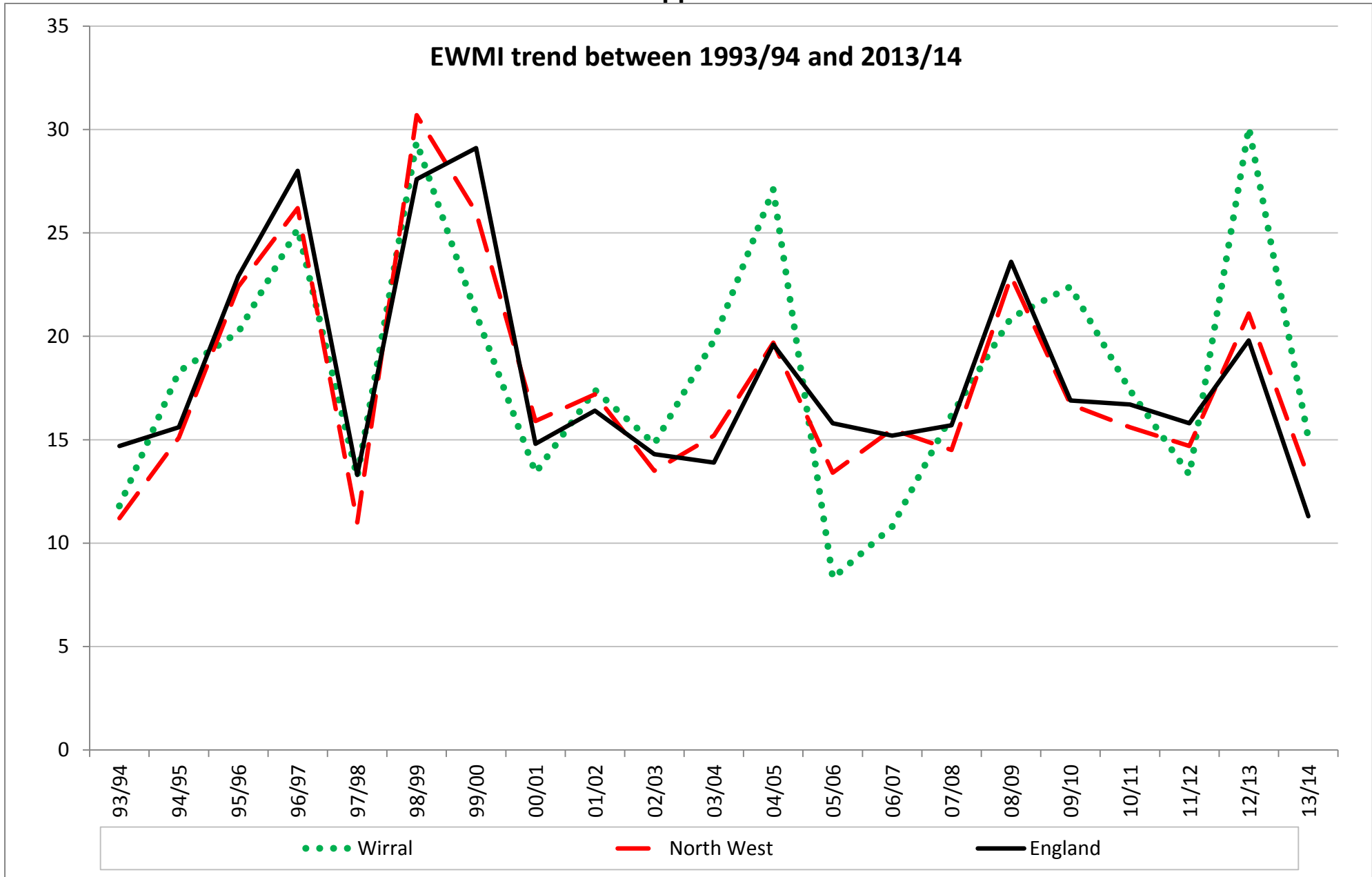
[Home Energy Conservation Act 1995 – Biennial Progress Report \(Wirral, 2015\)](#)

[Cold Weather Plan, Wirral Community Trust, 2013/14](#)

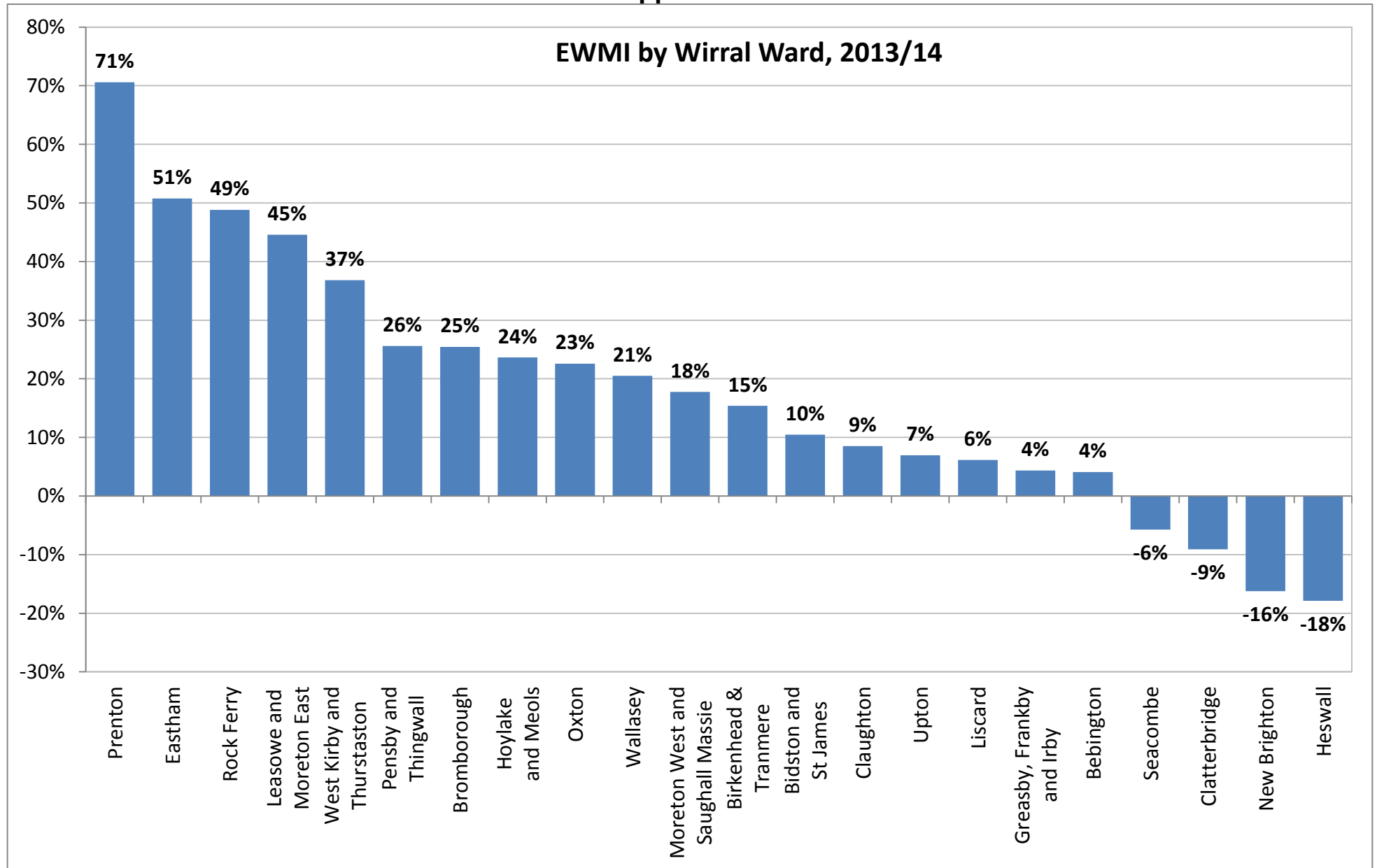
[Cold Weather Plan \(cwp\) for England, PHE](#)

Appendix 1

EWMI trend between 1993/94 and 2013/14



Appendix 2



References

EuroMOMO (undated) *Pooled analyses of all-cause mortality indicates low excess mortality in Europe in the winter of 2013/14, in particular amongst the elderly* EuroMOMO [online] Available at: <http://www.euromomo.eu/> Accessed on 29/12/15

<http://www.energybillrevolution.org/fuel-poverty/> Accessed on 29/12/15

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